

Petromagnetic and paleomagnetic characterization deposits at Mesozoic/Cenozoic boundary: The Tetrtskaro section (Georgia)

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Abstract

Petromagnetic and magnetostratigraphic characteristics are obtained for the Tetrtskaro section. The boundary layer at the Mesozoic/Cenozoic (K/T) boundary is fixed primarily by an abrupt rise in the paramagnetic magnetization (total Fe concentration) and, to a lesser degree, by an increase in the concentration of such magnetic minerals as goethite, hemoilmenite, and magnetite. The along-section distribution of titanomagnetite of volcanic origin and metallic iron of cosmic origin does not correlate with the K/T boundary and lithologic properties of the sediments. The boundary of the Mesozoic and Cenozoic geological eras lies within the reversed polarity chron C29r and is marked by an abrupt rise in the geomagnetic field paleointensity and an instability of paleomagnetic directions, rather than by a polarity change. The accumulation time of the boundary clay layer is about 1.5-2 kyr, while abrupt changes in the paleointensity and direction of the geomagnetic field encompass 30-40 kyr. Such long occurrence intervals of the events in question cannot be related to a short-term impact phenomenon. © Pleiades Publishing, Ltd. 2009.

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